

Table 1 - State Review Comments on Status of Kinetic Test Program and Proposed Modifications (SRK May 21, 2009)

Attachment	Test Type	Sample Category	Sample ID	Rock Type	Comments	Questions	SRK Response
A	HCT	Pre-Tertiary Volcano-Sedimentary Rock (Pebble West Zone)	n/a	n/a	No comments at this time.	No questions at this time.	
B	HCT	Pre-Tertiary Plutonic Rock (Pebble West Zone)	n/a	n/a	No comments at this time.	No questions at this time.	
C	HCT	Tertiary Rock (Pebble West Zone)	n/a	n/a	No comments at this time.	No questions at this time.	
D	HCT	Pre-Tertiary Volcano-Sedimentary Rock (Pebble East Zone)	406717	Y	Pb and Ag do not appear to be stable. Mo in slight up-trend for last 6-months.	Please review and indicate why termination is recommended.	It is acknowledged that the silver, lead and molybdenum all show variability but the main criteria of observing oxidation rates under strongly acidic conditions has been met. Some variability in metal release under these conditions can be expected
E	HCT	Pre-Tertiary Plutonic Rock (Pebble East Zone)	224182	G	As, Cd, Cu, and Pb appear to be increasing.	Please review and indicate why termination is recommended.	Relative to other tests, these minor trends were not considered significant. The results provide stable indication of oxidation rates under the pH conditions observed.
E	HCT	Pre-Tertiary Plutonic Rock (Pebble East Zone)	226293	Gp	Sb, AS, Co, and Cu trends are parallel but higher than those for sample # 224956. Mn increasing in sample # 226293 while Mn decreasing in sample # 224956.	Please review and indicate why sample # 226293 was selected for termination over sample # 224956.	The recommendation was based on the preference to span the range of release rates observed for arsenic which is an important parameter in the Pebble Deposit. By continuing 224956, the range of release rates could be covered. The difference between Mn release rates was not considered as important as the other trace elements.
E	HCT	Pre-Tertiary Plutonic Rock (Pebble East Zone)	105456	Gs	Sb, As and V appear to be increasing.	Please review and indicate why termination is recommended.	Relative to other tests, these minor trends were not considered significant. The results provide stable indication of oxidation rates under the pH conditions observed.
F	HCT	Tertiary Rock (Pebble East Zone)	219189	TY	pH is decreasing. Sn, Ca, Mg, and K appear to be increasing.	Please review and indicate why termination is recommended.	The recommendation was based on the stability of oxidation rates. The shift in Ca, Mg and K is linked to the decrease in Na. This effect may be due to ion exchange but is not specifically linked to oxidation and trace element leaching so was not considered to have indicated instability
G	HCT	Barrel Test Samples	n/a	n/a	No comments at this time.	No questions at this time.	
H	HCT	Ore Composite Sample	n/a	n/a	No comments at this time.	No questions at this time.	
I	Column	Pre-Tertiary (Pebble West Zone)	3102-0568-0588	Y	SO4, Cd, Cu, Mo and Se appear to be increasing.	Please review and indicate why termination is recommended.	Discussion of the rationale behind operating subaqueous column tests is provided in the text. While leachates show some variation in chemistry, the long duration of the tests is no longer providing relevant information for the evaluation of subaqueous wastes under typical disposal conditions. The tests provide information on the performance of subaqueously disposed wastes. Some tests are being used to evaluate long term trends
I	Column	Pre-Tertiary (Pebble West Zone)	3124-0188-0209	Y	Acidity and Ag appear to be increasing. Lower pH and higher acidity release rate compared to sample # 3069-0927-0947.	Leachate trends appear similar to those of sample 3069-0927-0947; however, it is a different rock type. Does this affect the recommendation to terminate the HCT? Please explain rationale for termination.	This test has confirmed that acidic rock disposed underwater remains acidic. The proposed continuation of 0927-0947 will continue to evaluate this finding. The difference between rock types is considered sufficiently significant to warrant continuation of both tests
J	Column	Tertiary (Pebble East Zone)	n/a	n/a	No comments at this time.	No questions at this time.	
K	HCT	2005 Tails	S2-Bulk Cleaner Tails	n/a	Mg and Mn appear to be increasing. Cu appears to be increasing over last 100-days. Mo appears to be increasing over last 700-days.	Please review and indicate why termination is recommended. If S2 and S1 are the same material, should at least one test continue?	The main variable of interest for the tailings is the correlation of oxidation rate with sulfur content. The stable oxidation rates have allowed this to be evaluated. The long term data shows that variations in trace element leaching occur but these are not considered to be major upward or downward trends. Continuation of one leach column containing similar tailings generated in 2005 is recommended.
K	HCT	2005 Tails	S1-Bulk Cleaner Tails	n/a	Mg appears to be increasing. Sb appears to be increasing over last 200-days. Cu appears to be increasing over last 250 days. Mo appears to be increasing over last 700 days.	Please review and indicate why termination is recommended. If S2 and S1 are the same material, should at least one test continue?	The main variable of interest for the tailings is the correlation of oxidation rate with sulfur content. The stable oxidation rates have allowed this to be evaluated. The long term data shows that variations in trace element leaching occur but these are not considered to be major upward or downward trends.
L	HCT	2008 Tails	PP08-3365	Y - bulk tails	pH appears to be slightly decreasing. Cu numbers appear "noisy".	Please review and discuss NP/AP vs. calculated time to onset of acid conditions vs. recent leachate pH.	The main variable of interest for the tailings is the correlation of oxidation rate with sulfur content. The stable oxidation rates have allowed this to be evaluated. Discussion of copper leaching is provided in the text. Copper variability seems to be greater than other trace elements in long term tests. Therefore, it was not considered as a factor in selecting testwork for continuation.
L	HCT	2008 Tails	PP08-3607	Y - bulk tails (cyclone slimes)	pH appears to be slightly decreasing. Cu numbers appear "noisy".	Please review and discuss NP/AP vs. calculated time to onset of acid conditions vs. recent leachate pH.	Delays to acid onset should not have been calculated in the case of samples with NP/AP exceeding 2. For some samples with NP/AP < 1, it might have been expected that acid conditions have developed by now. The lack of observed acidic conditions indicates the sulfide oxidation to-date has resulted in too little acid generation to result in acidic conditions. Four continuing tests will evaluate the potential for acid conditions to develop.
L	HCT	2008 Tails	PP08-3614	G - bulk tails	pH appears to be slightly decreasing. Cu numbers appear "noisy".	Please review and discuss NP/AP vs. calculated time to onset of acid conditions vs. recent leachate pH.	See above
L	HCT	2008 Tails	PP08-3610	G - bulk tails (cyclone slimes)	pH appears to be slightly decreasing. Cu numbers appear "noisy".	Please review and discuss NP/AP vs. calculated time to onset of acid conditions vs. recent leachate pH.	See above
M	Column	2005 Tails	S1-Scavenger Tails	n/a	Cu and Mg appears to be increasing over last 800-days.	Please review and indicate why termination is recommended.	See above The main factor considered for this column was the overall stability of leachate chemistry at low concentrations. The copper trend is believed to have flattened though the overall variation and trending is occurring at low leaching levels.

Purpose of tests undertaken:
Humidity cell tests (HCT) - to evaluate the oxidation rates of sulfide minerals. Oxidation controls acid generation which in turn is linked to depletion of acid neutralization minerals and decreases in solution pH. The potential for and timing of pH decreases can be deduced by evaluation of sulfate and major element (Ca, Mg, Na and K) release rates.
Column tests - to evaluate how reaction rates change when waste is placed underwater (e.g. following subaqueous disposal, or flooding by rising water levels in mine workings/pits). The expectation is that the oxygen-limited conditions imposed by the water cover will result in reduction in oxidation rates. Subaqueous columns